

## AMENDMENTS TO THE CLAIMS

Please replace the pending claims with the following claim listing:

1-36. **(Canceled)**

37. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the second laser is a semiconductor laser and the first laser oscillates in a multimode, [[and]]

wherein the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm,

wherein the polarization maintaining fiber coupled to the output of the first laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the first laser and the fiber Bragg grating are configured as a resonator structure, and

wherein the wavelength  $\lambda_3$  of a sum frequency is a wavelength of  $589.3 \pm 2$  nm that is equivalent to the sodium D line.

38. **(Previously Presented)** The laser light source according to claim 37, wherein, representing refractive indices of the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

39. **(Previously Presented)** The laser light source according to claim 38, wherein, the nonlinear optical crystal has a waveguide structure.

40. **(Previously Presented)** The laser light source according to claim 37, wherein, the wavelength  $\lambda_1$  is  $976\pm 10$  nm and the wavelength  $\lambda_2$  is  $1485\pm 20$  nm.

41. **(Previously Presented)** The laser light source according to claim 37, wherein, the wavelength  $\lambda_1$  is  $1064\pm 10$  nm and the wavelength  $\lambda_2$  is  $1320\pm 20$  nm.

42. **(Previously Presented)** The laser light source according to claim 37, wherein, the wavelength  $\lambda_1$  is  $940\pm 10$  nm and the wavelength  $\lambda_2$  is  $1565\pm 35$  nm.

43. **(Previously Presented)** The laser light source according to claim 40, wherein the second laser for outputting a wavelength  $\lambda_2 = 1485\pm 20$  nm is a DFB laser.

44. **(Previously Presented)** The laser light source according to claim 41, wherein the second laser for outputting a wavelength  $\lambda_3 = 1320\pm 20$  nm is a DFB laser.

45. **(Previously Presented)** The laser light source according to claim 42, wherein the second laser for outputting a wavelength  $\lambda_2 = 1565\pm 35$  nm is a DFB laser.

46-47. **(Canceled)**

48. **(Currently Amended)** The laser light source according to claim ~~[[47]]~~ 37, wherein at least one of the first and second lasers has a first facet that is coupled to the polarization maintaining fiber and a second facet opposite to the first facet, the first facet being specified to have a reflectance of 2% or less and the second facet being specified to have a reflectance of 90% or more.

49. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the second laser is a semiconductor laser and the first laser oscillates in a multimode, [[and]]

wherein the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm,

wherein the polarization maintaining fiber coupled to the output of the first laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the first laser and the fiber Bragg grating are configured as a resonator structure, and

wherein the wavelength  $\lambda_1$  is  $940 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1320 \pm 20$  nm, and the wavelength  $\lambda_3$  of the sum frequency is a wavelength of  $546.1 \pm 5.0$  nm corresponding to a yellow range.

50. **(Previously Presented)** The laser light source according to claim 49, wherein, representing refractive indices at the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

51. **(Previously Presented)** The laser light source according to claim 50, wherein the nonlinear optical crystal has a waveguide structure.

52. **(Previously Presented)** The laser light source according to claim 49, wherein the second laser is a DFB laser.

53-54. **(Canceled)**

55. **(Currently Amended)** The laser light source according to claim [[54]] 49, wherein at least one of the first and second lasers has a first facet that is coupled to the polarization maintaining fiber and a second facet opposite to the first facet, the first facet being specified to have a reflectance of 2% or less and the second facet being specified to have a reflectance of 90% or more.

56. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the second laser is a semiconductor laser and the first laser oscillates in a multimode, [[and]]

wherein the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm,

wherein the polarization maintaining fiber coupled to the output of the first laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the first laser and the fiber Bragg grating are configured as a resonator structure, and

wherein the wavelength  $\lambda_1$  is  $980 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1320 \pm 20$  nm, and the wavelength  $\lambda_3$  of the sum frequency is a wavelength of  $560.0 \pm 5.0$  nm corresponding to a yellow range.

57. **(Previously Presented)** The laser light source according to claim 56, wherein, representing refractive indices at the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

58. **(Previously Presented)** The laser light source according to claim 57, wherein the nonlinear optical crystal has a waveguide structure.

59. **(Previously Presented)** The laser light source according to claim 56, wherein the second laser is a DFB laser.

60-61. **(Canceled)**

62. **(Previously Presented)** The laser light source according to claim ~~[[61]]~~ 56, wherein at least one of the first and second lasers has a first facet that is coupled to the polarization maintaining fiber and a second facet opposite to the first facet, the first facet being specified to have a reflectance of 2% or less and the second facet being specified to have a reflectance of 90% or more.

63. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of a wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the second laser is a semiconductor laser and the first laser oscillates in a multimode, [[and]]

wherein the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm,

wherein the polarization maintaining fiber coupled to the output of the first laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the first laser and the fiber Bragg grating are configured as a resonator structure, and

wherein the wavelength  $\lambda_1$  is  $1064 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1320 \pm 20$  nm, and the wavelength  $\lambda_3$  of the sum frequency is a wavelength of  $585.0 \pm 5.0$  nm corresponding to a yellow range.

64. **(Previously Presented)** The laser light source according to claims 63, wherein, representing refractive indices at the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

65. **(Previously Presented)** The laser light source according to claim 64, wherein the nonlinear optical crystal has a waveguide structure.

66. **(Previously Presented)** The laser light source according to claim 63, wherein the second laser is a DFB laser.

67-68. **(Canceled)**

69. **(Currently Amended)** The laser light source according to claim ~~[[68]]~~ 63, wherein at least one of the first and second lasers has a first facet that is coupled to the polarization maintaining fiber and a second facet opposite to the first facet, the first facet being specified to have a reflectance of 2% or less and the second facet being specified to have a reflectance of 90% or more.

70. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the second laser is a semiconductor laser and the first laser oscillates in a multimode, ~~[[and]]~~

wherein the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm,

wherein the polarization maintaining fiber coupled to the output of the first laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the first laser and the fiber Bragg grating are configured as a resonator structure, and

wherein the wavelength  $\lambda_1$  is  $940 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1550 \pm 30$  nm, and the wavelength  $\lambda_3$  of the sum frequency is a wavelength of  $585.0 \pm 5.0$  nm corresponding to a yellow range.

71. **(Previously Presented)** The laser light source according to claim 70, wherein, representing refractive indices at the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

72. **(Previously Presented)** The laser light source according to claim 71, wherein the nonlinear optical crystal has a waveguide structure.

73. **(Previously Presented)** The laser light source according to claim 70, wherein the second laser is a DFB laser.

74-75. **(Canceled)**



76. **(Currently Amended)** The laser light source according to claim [[75]] 70, wherein at least one of the first and second lasers has a first facet that is coupled to the polarization maintaining fiber and a second facet opposite to the first facet, the first facet being specified to have a reflectance of 2% or less and the second facet being specified to have a reflectance of 90% or more.

77. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the first laser is a semiconductor laser in a single mode oscillation,

the second laser is a DFB laser,

the polarization maintaining fiber coupled to the second laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the second laser and the fiber Bragg grating are configured as a resonator structure,

the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm, and

the wavelength  $\lambda_1$  is  $976 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1485 \pm 20$  nm, the wavelength  $\lambda_3$  of a sum frequency is a wavelength of  $589.3 \pm 2$  nm that is equivalent to the sodium D line.

78. **(Previously Presented)** The laser light source according to claim 77, wherein, representing refractive indices of the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

79. **(Previously Presented)** The laser light source according to claim 78, wherein, the nonlinear optical crystal has a waveguide structure.

80. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the first laser is a semiconductor laser in a single mode oscillation,

the second laser is a DFB laser,

the polarization maintaining fiber coupled to the second laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the second laser and the fiber Bragg grating are configured as a resonator structure,

the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm, and

the wavelength  $\lambda_1$  is  $1064 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1320 \pm 20$  nm, the wavelength  $\lambda_3$  of a sum frequency is a wavelength of  $589.3 \pm 2$  nm that is equivalent to the sodium D line.

81. **(Previously Presented)** The laser light source according to claim 80, wherein, representing refractive indices of the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

82. **(Previously Presented)** The laser light source according to claim 81, wherein, the nonlinear optical crystal has a waveguide structure.

83. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the first laser is a semiconductor laser in a single mode oscillation,

the second laser is a DFB laser,

the polarization maintaining fiber coupled to the second laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the second laser and the fiber Bragg grating are configured as a resonator structure,

the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm, and

the wavelength  $\lambda_1$  is  $940 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1565 \pm 35$  nm, the wavelength  $\lambda_3$  of a sum frequency is a wavelength of  $589.3 \pm 2$  nm that is equivalent to the sodium D line.

84. **(Previously Presented)** The laser light source according to claim 83, wherein, representing refractive indices of the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

85. **(Previously Presented)** The laser light source according to claim 84, wherein, the nonlinear optical crystal has a waveguide structure.

86. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the first laser is a semiconductor laser in a single mode oscillation,

the second laser is a DFB laser,

the polarization maintaining fiber coupled to the second laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the second laser and the fiber Bragg grating are configured as a resonator structure,

the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm, and

the wavelength  $\lambda_1$  is  $940 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1320 \pm 20$  nm, and the wavelength  $\lambda_3$  of the sum frequency is a wavelength of  $546.1 \pm 5.0$  nm corresponding to a yellow range.

87. **(Previously Presented)** The laser light source according to claim 86, wherein, representing refractive indices of the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

88. **(Previously Presented)** The laser light source according to claim 87, wherein, the nonlinear optical crystal has a waveguide structure.

89. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the first laser is a semiconductor laser in a single mode oscillation,

the second laser is a DFB laser,

the polarization maintaining fiber coupled to the second laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the second laser and the fiber Bragg grating are configured as a resonator structure,

the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm, and

the wavelength  $\lambda_1$  is  $980 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1320 \pm 20$  nm, and the wavelength  $\lambda_3$  of the sum frequency is a wavelength of  $560.0 \pm 5.0$  nm corresponding to a yellow range.

90. **(Previously Presented)** The laser light source according to claim 89, wherein, representing refractive indices of the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi/\Lambda.$$

91. **(Previously Presented)** The laser light source according to claim 90, wherein, the nonlinear optical crystal has a waveguide structure.

92. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the first laser is a semiconductor laser in a single mode oscillation,

the second laser is a DFB laser,

the polarization maintaining fiber coupled to the second laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the second laser and the fiber Bragg grating are configured as a resonator structure,

the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm, and

the wavelength  $\lambda_1$  is  $1064 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1320 \pm 20$  nm, and the wavelength  $\lambda_3$  of the sum frequency is a wavelength of  $585.0 \pm 5.0$  nm corresponding to a yellow range.

93. **(Previously Presented)** The laser light source according to claim 92, wherein, representing refractive indices of the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

94. **(Previously Presented)** The laser light source according to claim 93, wherein, the nonlinear optical crystal has a waveguide structure.

95. **(Currently Amended)** A laser light source comprising a first laser for generating a laser beam of a wavelength  $\lambda_1$ , a second laser for generating a laser beam of a wavelength  $\lambda_2$ , and a nonlinear optical crystal that uses the laser beam of the wavelength  $\lambda_1$  and the laser beam of the wavelength  $\lambda_2$  as inputs and outputs a coherent beam having a wavelength  $\lambda_3$  of a sum frequency that satisfies a relationship of  $1/\lambda_1 + 1/\lambda_2 = 1/\lambda_3$ , comprising:

two polarization maintaining fibers coupled to outputs of the first and second lasers, respectively; and

a multiplexer for multiplexing outputs of the two polarization maintaining fibers and coupling a multiplexed output to the nonlinear optical crystal,

wherein the first laser is a semiconductor laser in a single mode oscillation,

the second laser is a DFB laser,

the polarization maintaining fiber coupled to the second laser has a fiber Bragg grating with a full width of half maximum of 0.5 or less and the second laser and the fiber Bragg grating are configured as a resonator structure,

the nonlinear optical crystal has a periodically poled structure and a length of the nonlinear optical crystal is 10 – 60 mm, and

the wavelength  $\lambda_1$  is  $940 \pm 10$  nm, the wavelength  $\lambda_2$  is  $1550 \pm 30$  nm, and the wavelength  $\lambda_3$  of the sum frequency is a wavelength of  $585.0 \pm 5.0$  nm corresponding to a yellow range.

96. **(Previously Presented)** The laser light source according to claim 95, wherein, representing refractive indices of the wavelengths  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  by  $n_1$ ,  $n_2$ , and  $n_3$ , respectively, the nonlinear optical crystal has a periodically poled structure of a period  $\Lambda$  that satisfies

$$2\pi n_3/\lambda_3 = 2\pi n_1/\lambda_1 + 2\pi n_2/\lambda_2 + 2\pi n_2/\Lambda.$$

97. **(Previously Presented)** The laser light source according to claim 96, wherein, the nonlinear optical crystal has a waveguide structure.